Abstract of the Invention

Machine vision inspection methods and systems according to the invention take an average (or other statistical measure) of pixel values within neighborhoods or groups of

5   pixels within an image. The averages are compared with one or more thresholds and a result generated for each neighborhood. The results generated for all such neighborhoods can, for example, be used to identify defective regions in the acquired image, notwithstanding a high degree of intensity, brightness, color or contrast variation at the pixel level – e.g., of the type commonly occurring when imaging non-woven materials. Such methods and systems are

10   advantageous because an originally acquired, high-resolution (non-defocused) image can be preserved and processed in parallel with a neighborhood-based defocused and thresholded image. Systems employing these methods achieve the thresholding capability of traditional defocused systems, while providing clear, detailed, high-resolution images for display or other analysis. Such systems provide this dual capability using image data acquired from a

15   single camera or camera array.